

---

# FRBSF WEEKLY LETTER

June 12, 1987

## Consumption, Oil Prices, and the Dollar

Last year, households increased their consumption expenditures by significantly more than the rise in their incomes. Over the four quarters of the year, personal consumption expenditures, adjusted for inflation, rose four percent, while personal disposable income increased less than two and one-quarter percent. As a result, saving by households declined to only 3.8 percent of their disposable income — the lowest annual saving rate since 1947.

The share of national income that the private sector has chosen to save has been trending downward for a number of years. But the decline last year was particularly sharp. A reduced supply of domestic savings means either that less funds are available to finance capital investment and the government's deficit, or that the inflow of foreign savings into the United States must increase.

In 1986, the shortfall in domestic saving was made up by a huge inflow of capital from abroad. This inflow, which was the financial counterpart of the nation's international trade deficit, provided almost a third of the \$432 billion needed to finance net investment in physical capital and the federal deficit. If the share of the national income saved by the private sector had been as high last year as it was in the 1970s, our demand for foreign savings could have been cut in half and, as a result, real interest rates in the U.S. would have been substantially lower.

There are reasons to believe that last year's burst of consumption spending was the result of special events that are unlikely to be repeated. As households adjust their personal saving toward more normal levels relative to their incomes, household demand for goods and services will be weaker. Although this is likely to hurt the parts of the economy that supply consumer

goods, and make the continuation of the economic expansion dependent on growth in other sectors of the economy, some slowing in the growth of household consumption is desirable. From a longer run perspective, a higher level of domestic savings will help us to reduce our trade deficit and keep interest rates down.

### **Saving, oil, and the dollar**

One important temporary factor boosting household spending last year was the abrupt fall in the price of oil — between January and April, the price of crude petroleum was cut in half. The resulting reduction in the cost of their purchases of gasoline, home heating oil, and other petroleum products meant that households had more real income available to spend on other items. It is true, of course, that the oil price decline also led to painful losses of jobs and income for those involved in the production of oil as producers reduced their output and sold that output at lower prices.

Nonetheless, the overall effect of the oil price drop on real incomes appears to have been positive. Since the U.S. used more oil than it produced domestically, the beneficial effects of the price decline on the *users* of oil offset the deleterious effects on the *producers*, even though the latter commanded more attention because producers are concentrated in particular regions of the country.

A second factor that may have had an effect — in this case negative — on household consumption last year was the decline in the international value of the dollar. A lower value of the dollar in terms of foreign currencies means that the prices of imported products rise. As a result, the purchasing power of households' incomes is reduced, and household consumption tends to decrease.

# FRBSF

The effects of the oil price decline and of the dollar depreciation, although working in opposite directions, are analogous. Because a decline in the price of imported oil means that we can obtain oil from abroad in exchange for a smaller volume of exports, more of our total output is available for domestic use. Last year, for example, the dollar value of our oil imports declined by a third but the quantity imported increased by one fourth. Conversely, the dollar's depreciation caused the prices of our non-oil imports to rise relative to those of our exports. We had to export more goods and services in order to purchase a given volume of non-oil imports, leaving less output available for domestic use. On balance, the beneficial effect of the oil price decline outweighed that of the dollar's depreciation.

## Measuring the effect

I have attempted to estimate the quantitative significance of these two factors on household consumption using a statistical model of the U.S. economy developed at this Bank. In this model, households' expenditures depend primarily on their income. The share of the nation's output that goes to households is determined by the government's system of taxes and transfer payments, but the purchasing power, or real value, of that income depends on the prices of consumer goods. An increase or decrease in the cost of imports affects the average prices that households face and therefore changes their real incomes and leads them to alter their consumption spending. In particular, lower imported oil prices tend to stimulate consumer spending, whereas a depreciation of the dollar, by raising import prices, tends to have a negative effect.

This model was used to estimate the importance of the oil price decline and the dollar depreciation on the behavior of consumer spending since 1984. The estimates were made by simulating the consumption sector of the model, holding constant the price of oil and the real exchange rate, respectively, and comparing the simulated path of consumption with that which actually occurred.

The simulations assume that real GNP followed the same path as it did historically. Thus, they do not take account of the fact that a different pattern of household spending would have altered the level of incomes earned in the industries producing consumer goods and thereby caused "multiplier" effects elsewhere in the economy. They also ignore the probability that the depreciation of the dollar and the oil price reduction led consumers to substitute between domestic and foreign products. Nevertheless, by suppressing all their other effects on GNP, this procedure has the advantage of highlighting the direct effects of the dollar and oil price depreciation on consumption.

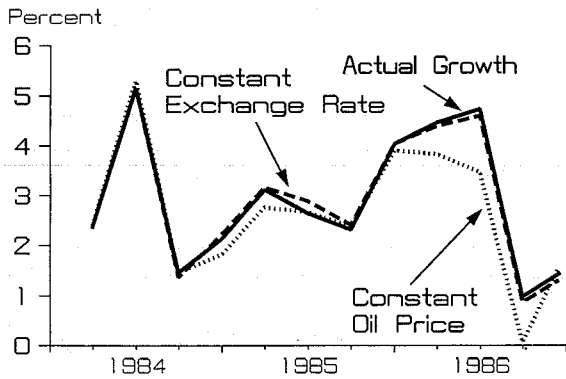
The accompanying chart shows the results of these simulation experiments. The effects on household spending of last year's decline in the price of oil appear to have been substantial. The simulations indicate that if oil prices had not declined, real consumption expenditures on nondurables and services in 1986 would have been lower by about \$13 billion. The growth in these expenditures over the four quarters of the year would have been reduced from its actual pace of almost 3 percent to around 2¼ percent.

However, the model suggests that the effects of the depreciation of the dollar in reducing consumer spending were much smaller. The decline in the exchange rate after February 1985 appears to have lowered real outlays on nondurables and services by only about \$1 billion. The effect on the growth rate of consumption was negligible. Moreover, since the dollar's decline probably led consumers to substitute U.S.-produced goods for imports, it is likely that, even though the depreciation caused consumption spending as a whole to decline slightly, its net effect on *domestic* producers of consumer goods was positive.

## 1987

The positive effects of last year's oil price decline are now largely over. Indeed, oil prices have been rising in recent months. The depressing effects of the decline in the dollar's value on

### Growth of Consumption of Nondurables and Services



household spending seem likely to continue, both because the dollar has continued to depreciate in 1987 and because its effects are passed through to import prices with a fairly long lag. Hence, the household spending component of the aggregate demand for goods and services is likely to be less robust this year than it was in 1986. In the first quarter of 1987, the personal saving rate increased to 3.4 percent from its record low of 2.7 percent in the second half of last year. Although this rate remains low compared to its historical average of around 7 percent, it is evidence that households already have begun to bring their consumption into a more normal relation with their real incomes.

**Brian Motley**

Opinions expressed in this newsletter do not necessarily reflect the views of the management of the Federal Reserve Bank of San Francisco, or of the Board of Governors of the Federal Reserve System.

Editorial comments may be addressed to the editor (Gregory Tong) or to the author . . . Free copies of Federal Reserve publications can be obtained from the Public Information Department, Federal Reserve Bank of San Francisco, P.O. Box 7702, San Francisco 94120. Phone (415) 974-2246.

Alaska Arizona California Hawaii Idaho  
 Nevada Oregon Utah Washington

**Research Department**  
**Federal Reserve**  
**Bank of**  
**San Francisco**

**BANKING DATA—TWELFTH FEDERAL RESERVE DISTRICT**  
 (Dollar amounts in millions)

<b>Selected Assets and Liabilities Large Commercial Banks</b>	<b>Amount Outstanding 5/20/87</b>	<b>Change from 5/13/87</b>	<b>Change from 5/21/86 Dollar</b>	
Loans, Leases and Investments <sup>1 2</sup>	206,450	2,470	2,382	1.1
Loans and Leases <sup>1 6</sup>	183,747	2,389	— 1,226	— 0.6
Commercial and Industrial	53,762	621	697	1.3
Real estate	68,375	321	1,538	2.3
Loans to Individuals	37,270	— 19	— 3,375	— 8.3
Leases	5,373	— 9	— 260	— 4.6
U.S. Treasury and Agency Securities <sup>2</sup>	15,394	77	4,158	37.0
Other Securities <sup>2</sup>	7,309	4	— 552	— 7.0
Total Deposits	205,625	1,219	3,802	1.8
Demand Deposits	52,590	735	4,159	8.5
Demand Deposits Adjusted <sup>3</sup>	48,063	— 47	3,427	7.6
Other Transaction Balances <sup>4</sup>	19,220	49	3,506	22.3
Total Non-Transaction Balances <sup>6</sup>	133,815	435	— 3,863	— 2.8
Money Market Deposit Accounts—Total	44,720	117	— 1,720	— 3.7
Time Deposits in Amounts of \$100,000 or more	31,745	135	— 5,197	— 14.0
Other Liabilities for Borrowed Money <sup>5</sup>	23,693	718	— 1,701	— 6.6
<b>Two Week Averages of Daily Figures</b>	<b>Period ended 5/18/87</b>	<b>Period ended 5/4/87</b>		
<b>Reserve Position, All Reporting Banks</b>				
Excess Reserves (+)/Deficiency (—)	81	19		
Borrowings	43	104		
Net free reserves (+)/Net borrowed(—)	38	— 84		

<sup>1</sup> Includes loss reserves, unearned income, excludes interbank loans  
<sup>2</sup> Excludes trading account securities  
<sup>3</sup> Excludes U.S. government and depository institution deposits and cash items  
<sup>4</sup> ATS, NOW, Super NOW and savings accounts with telephone transfers  
<sup>5</sup> Includes borrowing via FRB, TT&L notes, Fed Funds, RPs and other sources  
<sup>6</sup> Includes items not shown separately  
<sup>7</sup> Annualized percent change